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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,381	02/17/2004	Bill Tobler	81091393	1819

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EXAMINER	
GIBSON, ERIC M	

ART UNIT	PAPER NUMBER
3661	

DATE MAILED: 02/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/780,381	TOBLER ET AL.	
	Examiner	Art Unit	
	Eric M. Gibson	3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2/17/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claim 9 is objected under 35 U.S.C. 112, fourth paragraph, for failing to further limit the subject matter claimed. Claim 9 depends from itself. It is believed that claim 9 was intended to depend from independent claim 1. For the purpose of applying the prior art to the claim, it will be treated accordingly.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Aoyama (JP06094122).

a. Per claim 1, Aoyama teaches a method of limiting reactive torque transmitted from a set of driven wheels to a powertrain during a sudden braking event including slipping a drive connection between the traction wheels and the powertrain when the sudden braking event commences (see abstract translation).

b. Per claim 2, Aoyama teaches a predetermined slip rate (M6, figure 1).

c. Per claims 3-6, Aoyama teaches slipping the clutch (see abstract translation).

d. Per claim 7, Aoyama teaches determining whether a sudden braking event occurs (M4) and setting either a first slip level or a second slip level depending on whether there is sudden braking or not (see abstract translation).

e. Per claim 8, Aoyama teaches that if there is no sudden braking, the slip rate controlling means (M7) is retained in a coupling state or at a predetermined slip rate.

f. Per claim 9, Aoyama teaches a clutch interposed between the wheels and the powertrain (8, figure 2).

3. Claim 16 is rejected under 35 U.S.C. 102(b) as being anticipated by Asa et al. (US005654887A).

a. Per claim 16, Asa teaches a drive system for a vehicle including a powertrain including at least one electric drive motor (1, figure 1), at least one traction wheel (10, figure 1), and a driveline including a slip clutch transmitting positive torque during normal driving conditions (202, figure 7) but allowing slip during a sudden braking event (303, figure 7).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 10-16, 20, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoyama in view of Matsubara et al. (US005989156A).

a. Per claim 10, Aoyama teaches a method of limiting reactive torque transmitted from a set of driven wheels to a powertrain during a sudden braking event including slipping a drive connection between the traction wheels and the powertrain when the sudden braking event commences (see abstract translation). Aoyama does not explicitly teach applying the method to a hybrid vehicle. However, one of ordinary skill in the art at the time of the invention would know how to apply the method taught by Aoyama to a hybrid vehicle. Matsubara teaches that one of ordinary skill in the art at the time of the invention would find it obvious to apply a slip control system to both a conventional internal combustion engine and also electric or hybrid vehicles (column 11, lines 61-66). It would have been obvious to one of ordinary skill in the art, at the time of invention, to apply the method taught by Aoyama to a hybrid vehicle, as evidenced by the teaching of Matsubara.

b. Per claims 11, Aoyama teaches slipping the clutch (see abstract translation).

c. Per claim 12, Aoyama teaches a predetermined slip rate (M6, figure 1).

d. Per claim 13, Aoyama teaches transmitting negative torque from the wheels through the driveline to the powertrain during normal driving conditions and limiting the amount of torque transmitted during a sudden braking event (see abstract translation). Aoyama does not explicitly teach applying the method to a hybrid vehicle. However, one of ordinary skill in the art at the time of the invention would know how to apply the method taught by Aoyama to a hybrid vehicle. Matsubara teaches that one of ordinary skill in the art at the time of the invention would find it obvious to apply a slip control system to both a conventional internal combustion engine and also electric or hybrid vehicles (column 11, lines 61-66). It would have been obvious to one of ordinary skill in the art, at the time of invention, to apply the method taught by Aoyama to a hybrid vehicle, as evidenced by the teaching of Matsubara.

e. Per claims 14, Aoyama teaches slipping the clutch (see abstract translation).

f. Per claim 15, Aoyama teaches a predetermined slip rate (M6, figure 1).

g. Per claim 16, Aoyama teaches a drive system for a vehicle including a powertrain (figure 2), at least one traction wheel (inherent; not shown in figures) and a driveline (figure 2) including a slip clutch allowing slipping during sudden braking (see abstract translation).

h. Per claim 20, Aoyama teaches a vehicle drive system including an internal combustion engine (figure 2), at least one traction wheel (inherent; not shown in figures), a driveline (figure 2), a vehicle braking system (inherent), and a control system including a slip clutch controlling the torque transmitted during sudden braking (see abstract translation). Aoyama does not explicitly teach a hybrid vehicle. However, one of ordinary skill in the art at the time of the invention would know how to apply the system taught by Aoyama to a hybrid vehicle. Matsubara teaches that one of ordinary skill in the art at the time of the invention would find it obvious to apply a slip control system to both a conventional internal combustion engine and also electric or hybrid vehicles (column 11, lines 61-66). It would have been obvious to one of ordinary skill in the art, at the time of invention, to apply the system taught by Aoyama to a hybrid vehicle, as evidenced by the teaching of Matsubara.

i. Per claims 22 and 23, Aoyama teaches determining whether a sudden braking event occurs (M4) and setting either a first slip level or a second slip level depending on whether there is sudden braking or not (see abstract translation).

5. Claims 17-19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Aoyama and Matsubara as applied to claim 16 above, and further in view of Jackel (US005863274A).

a. Per claim 17, the combination teaches the invention as explained in the rejection of claim 16. The combination does explicitly teach friction plates and springs for engaging the plates. The claimed arrangement of a clutch was well-known and obvious to one of ordinary skill in the art at the time of the invention. Jackel teaches a

state of the art clutch that includes friction plates and springs to bias the plates (column 6, lines 53-59).

b. Per claim 18, Jackel teaches that the biasing force of the springs is adjustable (column 15, lines 48-57).

c. Per claim 19, Aoyama teaches adjusting the slip rate after sensing a sudden braking (M4, figure 1).

d. Per claim 21, the combination teaches the invention as explained in the rejection of claim 20. The combination does explicitly teach clutch plates and springs for engaging the plates. The claimed arrangement of a clutch was well-known and obvious to one of ordinary skill in the art at the time of the invention. Jackel teaches a state of the art clutch that includes clutch plates and springs to bias the plates (column 6, lines 53-59).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Masberg et al. (US006149544A) teaches a drive system for a motor vehicle with a drive unit and electric machine. Oyama (US006070680A) teaches a control system for a hybrid vehicle for improving regenerative braking efficiency while avoiding engine stalls during regenerative braking. Watanabe et al. (US005935043A) teaches a lockup control apparatus of a torque converter. Tabata et al. (US005923093A) teaches a hybrid vehicle drive system adapted to assure smooth brake application by a motor/generator or engine. Kashiwabra et al. (US005325946A)

teaches a control device and control method for an automatic transmission for a vehicle. Oldfield (US004827798A) teaches an apparatus and method for exerting a braking torque upon a vehicle.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric M. Gibson whose telephone number is (571) 272-6960. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EMG

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